Mrs. Graf

Monthly News Letter

Bureau of Agricultural Engineering

U. S. DEPARTMENT OF AGRICULTURE

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The annual meeting of the North Atlantic Section of the A.S.A.E. held at Toronto, Canada, was attended by Geo. R. Boyd, Wallace Ashby, L.A. Jones, and S. P. Lyle. Mr. Ashby and Mr. Lyle participated in a round-table discussion of farm structures which centered about two topics -- the use of Miscellaneous Publication 278 "Plans of Farm Buildings for Northeastern States" in extension work, and the standardization of poultry house design.

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Mr. Boyd also attended the International Plowing Match and Farm Machinery Demonstration, held this year near Fergus, Ontario. This was the 26th year of this famous peripatetic plowing match. The awarding of prizes is based solely on the skill of the plowmen. There were classes for both horse-drawn and tractor-drawn plows. Mr. Boyd reports the work of the plowmen was of high quality.

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Care Cuts Correspondence

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In the past few years there has been a continual increase in the number of reports to be submitted by the Washington office and also numerous new regulations which place an additional burden upon the staff of the Bureau. The records which have to be kept because of these regulations make it necessary to call upon the field offices frequently for information. Usually this information is furnished accurately and promptly, but in too many cases it is necessary to request the information a second time, which causes delay and increases correspondence.

It has also been found necessary to write many letters regarding administrative and fiscal matters which could be avoided if the engineer in charge of each field office would give a little more thought to this matter. It is desirable that we reduce such correspondence so as to leave more time for productive work. With the full cooperation much can be done to accomplish this.

L. W. McCrory

During the first part of October Mr. McCrory made a tour of inspection of some of the Bureau field activities during which he conferred with C. K. Shedd at Ames, Iowa, B. O. Childs at Lafayette, Ind., J. W. Randolph, at Auburn, Ala.; Chas. A. Bennett at Stoneville, Miss., and Wm. V. Taylor of the Bureau of Biological Survey, at St. Louis, Mo.

He also saw Dean F. M. Dawson of the School of Engineering, Iowa State University in regard to a continuation of the cooperative hydraulic studies at Iowa City.

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J. R. McCalmont is on a field trip observing mechanical equipment used in various milk-producing sections for cooling milk on farms. He has visited New York, Pennsylvania, Wisconsin, and Missouri and will go to Texas, Louisiana, Alabama, and Virginia, before returning to Washington. The observations he makes are to be used in revising Circular 336, Cooling Milk on the Farm with Small Mechanical Outfits.

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Corn for the grain storage studies in Iowa and Illinois is being harvested and cribbed.

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R. B. Gray left Washington October 3 on a field trip to inspect mechanical equipment work at the various field stations. He stopped first at the Toledo, Ohio, office after which he attended the annual meeting of the Farm Equipment Institute at Chicago, October 6 and 7. Enroute to Davis and Berkeley, Calif., he inspected the corn machinery project at Ames, Iowa, the sugar beet machinery work at Fort Collins, Colo., and the recently inaugurated project on weed control at Logan, Utah. On his return trip he went over the cotton picker, sweet potato harvester and tillage machinery studies at Stoneville, Miss., and Auburn, Ala.

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Following inspection of sweet potato harvesting operations in Delaware and Virginia on September 23 and 24, G. A. Cumings and W. M. Hurst reported that the cooperative fertilizer placement experiments indicated fertilizer should not be placed near the sweet potato plant, the best location being about 5 inches to each side of the row and 5 inches below the soil surface. In harvesting the sweet potatoes are plowed out with a common walking type turning plow or with a slatted moldboard plow. For certain varieties which require specially careful handling a lifting blade is drawn under the potatoes to loosen them, after which they are pulled up with the vines.

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In mid-October W. M. Hurst and George Stafford observed the different methods of harvesting sweet potatoes used at the Laurel Starch Plant. Field trials with several types of harvesting equipment are being made to determine the most practical methods where mechanical injury to the potatoes is not a serious objection.

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L. G. Schoenleber, with the assistance of D. B. Eldredge, is constructing a special fertilizer-grain drill to be used in fertilizer placement experiments with soybeans and small grains. Double-disk furrow openers will be installed as fertilizer depositors and special sugar beet shoes with press or gage wheels will be employed to obtain uniform coverage of the seed at shallow planting depths.

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According to Claude K. Shedd the crop produced on the corn production machinery plots at Ames, Iowa, is the best grown since the project was started. The machines and cultural practices under test have been tried under a variety of conditions during the last four years. Weather was unusually dry in 1934 and 1936. In 1935 there was excessive rainfall in June. In 1937 growing conditions have been favorable during the entire growing season.

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W. R. Humphries, cooperating with C. A. Bennett and others at Stoneville, Miss., is carrying on mechanical cotton picker studies. Field records have been obtained on the machines under development by the International Harvester Company and the Rust Brothers. It is also planned to get performance records on the Berry harvester.

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E. M. Dieffenbach reached Logan, Utah, on September 29 to inaugurate a study of weed control in cooperation with other Federal bureaus and the Utah Agricultural Experiment Station. Two field experiments in weed control were established in Utah, one on Canada thistles at Heber, and the other on sow thistle at Vernal.

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On October 2 Mr. Dieffenbach made a field trip with the Utah Section of the American Society of Civil Engineers.

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According to S. W. McBirney results of tests of the Scott Viner sugar beet harvester have not been so favorable this year as last. This may be in part the result of the fact that the tests were made later in the season and the beet tops were not so good. There is much interest in the harvester and many visitors have seen the machine in operation.

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Lewis A. Jones, Chief, Division of Drainage Investigations, inspected willow bank protection work at Buffalo, New York. Several years ago willow poles were laid in shallow trenches up the bank of the stream with the butts below the low-water elevation and the tops practically flush with the top of the bank. The poles were laid during the dormant season and were spaced about 4 feet apart. They sprouted along their entire length and now, after a period of four years, form a dense mass of vegetation that amply protects the bank against erosion at bends.

He also attended the meeting of the North Atlantic Section of the American Society of Agricultural Engineers at Toronto, Canada, and then went to Toledo, Ohio, where he conferred with Mr. Isler on machinery investigations in connection with the CCC drainage maintenance program. On his way back to Washington he visited the CCC drainage camps at Bowling Green and Wooster, Ohio.

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In connection with the CCC work, Mr. Isler has developed a double-drum winch equipped with a 25-foot boom and scraper suitable for mounting on the bed of a truck. It has proved satisfactory for cleaning out and deepening drainage ditches too small for dragline operation. Plans are being made to construct a number of these units for use by the CCC camps.

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The following work accomplishment is reported for September by the 44 CCC drainage camps:

4,424,558 square yards clearing, requiring 29,964 man-days; 2,161,787 cubic yards excavation and embankment, requiring 25,521 man-days; 37,385 lineal feet tile reconditioning requiring 4,106 man-days; and 15,761 man-days used on structural and miscellaneous work. A twelve per-cent reduction in the Central District in available enrollees over the previous month occurred, due principally to the approaching close of the enrollment period on October 1st, when many of the enrollees received discharge to seek or assume employment in private industry.

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Two drainage camps, one at Kokomo, Indiana, and the other at Eldred, Illinois, were closed on October 1st in line with the general reduction in the CCC program, leaving 32 camps in active service in the Central District.

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W. W. McLaughlin left Berkeley October 7 for Washington, D. C., on a special assignment that will probably keep him until the first of next year. En route he attended the annual meeting of the National Reclamation Association at Casper, Wyo., October 12-14, where he delivered an address on "The Rehabilitation of the Great Plains, and Water Conservation". Mr. McLaughlin stressed the need for a permanent agriculture, achieved by a proper coordination of water, soil, and human factors. Sparser population of the Great Plains and concentration of settlement along the water courses was recommended.

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The work of inspecting snow courses, placing markers, relocating courses and establishing new ones, supervising the construction of shelter cabins, and conferring with numerous forest supervisors and other cooperators concerning the snow survey measurements during the coming winter was continued by J. C. Marr, L. T. Jessup, R. L. Parshall, and R. A. Work. Arrangements were also made for weekly reports on snow, road, and weather conditions in certain areas where winter sports are popular, these reports to be broadcast for the information of the public.

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Early in the month Mr. Marr attended the annual meeting of the Western State Engineers at Helena, Mont., where he discussed the snow survey work in western Montana, with representatives of the Geological Survey and the Montana Experiment Station. Later in company with representatives of the Weather Bureau and the Water Resources Branch of the Geological Survey, Mr. Marr participated in setting up a project in Yellowstone National Park, involving snow surveying, meteorological measurements, and stream gaging.

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An article by Fred C. Scobey, "Technique in Mapping as Related to Land Use as Developed for the Rio Grande Joint Investigation", previously presented before a meeting of the Pacific Coast Section of the American Society of Agricultural Engineers at Berkeley, California, was published in the September issue of Agricultural Engineering. The article describes the unique method devised by Mr. Scobey for mapping and tabulating the areas in agricultural crops and water-consuming native vegetation in the major divisions of Rio Grande Basin above Ft. Quitman, Texas. The area mapped, extending for a distance of about 700 milesalong the Rio Grande, and having altitudes varying by about 6,000 feet, includes many variations of climate and soil and wide differences in acreages and kinds of crops. Instead of using planimeter calculations, areas were determined by means of weighing pieces of celluloid cut from thin sheets of that material which had been marked off with a stylus while superimposed upon aerial maps indicating outlines of fields of various crops. The weights of these classified pieces were then converted to areas in acres by comparison with the weights of "test blocks" of 1,000 acres, to scale, cut from the same sheet of celluloid.

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Development and calibration of a soil moisture indicator are being carried on by R. B. Allyn. The aim is to perfect an instrument that will quickly show in the field the soil moisture stress under which a particular orchard block or crop is functioning. A preliminary survey of all soil represented in the present orchard soil moisture control project of thirty separate blocks at the Medford experiment station, indicates that the device will work satisfactorily on soil types ranging from loam to clay adobe. The instrument will be used in the 1938 soil moisture control project.

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After inspection of irrigation practices in the vicinity of Spearfish, South Dakota, Leslie Bowen and S. P. Lyle reported that distribution of water is one of the larger problems there. Water is diverted from Spearfish Creek to eight separate ditches by means of rock and brush dams. Because facilities for measurement are lacking, little is known about the flow of the creek proper or the amount of water diverted to the several ditches, except that during periods of limited water supply the lower ditches are dry. Each ditch takes water at such time and in such amount as users on the ditch deem necessary, with the result that upstream users sometimes get all the water. Mr. Bowen suggested the water users begin taking records of flow of the main creek, that they install suitable structures for diversion and for measurement of the flow in the various ditches, and that they select a watermaster or river commissioner.

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A conference on the supplemental irrigation project in the Dakotas was held by W. W. McLaughlin, M. R. Lewis, Carl Rohwer, and Dean C. Muckel at Rapid City. Rohwer and Muckel also conferred with Government, State, and county officials and others regarding proposed irrigation projects, water supplies, well tests, the possibilities of water storage by means of reservoirs, etc. Mr. Rohwer finished his work on this project before the end of the month and returned to his headquarters at Fort Collins, Colo., leaving Mr. Muckel to complete the field work in South Dakota.

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